

claims

1. A method for connecting microcircuits comprising the steps of:

(a) generating an insulating resin solution;

(b) applying the resin solution to each circuit board having circuit patterns;

5 (c) aligning the circuit boards to face each other so that electrodes of the circuit boards face each other, in order to connect the corresponding electrodes of the circuit patterns formed in each circuit board;

(d) positioning an anisotropic conductive adhesive between the circuit boards;

10 (e) heating the circuit boards; and

(f) applying a predetermined pressure to an opponent side to a side applied by the anisotropic conduction adhesive so that corresponding electrodes are connected each other .

15 2. The method of claim1, wherein in the (a) step said resin solution is prepared by dissolving a thermoplastic resin having a softening point in the range of 60 to 150°C or a compound of the thermoplastic resin into a soluble solvent.

20 3. The method of claim 2, wherein the thermoplastic resin is selected from the group of consisting of polyethylene resin, ethylene copolymer resin, ethylene vinyl acetate copolymer resin, ethylene-acrylic acid copolymer resin, ethylene acrylic acid ester copolymer resin, poly amide resin, poly ester resin, styrene butadiene copolymer resin, ethylene-propylene copolymer resin, acrylic acid ester rubber, acrylonitrile-butadiene copolymer resin, phenoxy resin, thermoplastic 25 epoxy resin, poly urethane resin, poly vinyl acetal resin and poly vinyl butilal resin.

4. The method of claim 1, wherein in the (a) step said resin solution is prepared by dissolving thermoplastic resin having a softening point in the range of 80 to 120°C or a compound of the thermoplastic resin into a soluble solvent.

5 5. The method of claim 1, wherein in the (b) step said insulating film layer has a thickness of 0.1 to 5µm on the circuit board.

6. The method of claim 1, wherein in the (b) step said insulating film layer has a thickness of 0.3 to 3µm on the circuit board.

10 7. The method of claim 1, wherein the anisotropic conductive adhesive includes an insulating component, and conductive particles dispersed in the insulating component.

15 8. The method of claim 1, wherein in the (b) step said insulating film layer is formed on a plain portion and a side portion of the circuit patterns and a bottom portion of the circuit board.

20 9. The method of claim 1, wherein in the (b) step said insulating film layer is formed on a side portion of the circuit pattern and a bottom portion of the circuit board.

10. A connection structure of microcircuits comprising:

a first circuit board having first circuit patterns;

25 a second circuit board having second circuit patterns corresponding to the

first circuit patterns;

conductive particles positioned between the first circuit board and the second circuit board for connecting mutually corresponding electrodes in the first circuit patterns and the second circuit patterns;

5 an insulating component positioned between the first circuit board and the second circuit board, the insulating component including the conductive particles; and

an insulating film layer applied on the first and second circuit patterns and the first and second circuit boards.

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11. The connection structure of claim 10, wherein the corresponding electrodes have a predetermined plain area.

12. The connection structure of claim 10, wherein the corresponding  
15 electrodes include a front portion and side portions.

13. The connection structure of claim 10, wherein the insulating film layer is formed on side portions of the electrodes and a bottom portion of the circuit board.

20 14. The connection structure of claim 10, wherein the insulating film layer has a thickness of 0.1 to 5 $\mu\text{m}$ .

15. The connection structure of claim 10, wherein the insulating film layer has a thickness of 0.3 to 3 $\mu\text{m}$ .

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16. The connection structure of claim 10, wherein the insulating film layer is made of a thermoplastic resin.

17. The connection structure of claim 16, wherein the thermoplastic resin  
5 is selected from the group of consisting of polyethylene resin, ethylene copolymer resin, ethylene vinyl acetate copolymer resin, ethylene-acrylic acid copolymer resin, ethylene acrylic acid ester copolymer resin, poly amide resin, poly ester resin, styrene butadiene copolymer resin, ethylene-propylene copolymer resin, acrylic acid ester rubber, acrylonitrile-butadiene copolymer resin, phenoxy resin, thermoplastic  
10 epoxy resin, poly urethane resin, poly vinyl acetal resin and poly vinyl butilal resin.